

ABSTRACT OF THE DISCLOSURE

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A transmyocardial revascularization system including a plurality of inserts formed of a material to elicit a healing response in tissue of the myocardium and deployment instruments and associated components for deploying the inserts into the wall of the myocardium. The inserts are arranged to be disposed within respective lumens or channels in the wall of the myocardium. The inserts can take various forms, e.g., be solid members, tubular members, or porous members, and may be resorbable, partially resorbable or non-resorbable. In some embodiments the inserts are arranged to be left in place within the channels in the wall of the myocardium to result in plural lumens which enable blood to flow therethrough and into contiguous capillaries. The deployment instruments are arranged to pierce the tissue of the myocardium from either the endocardium or the epicardium to insert the inserts into the myocardium, depending on the particular deployment instrument used. The deployment instruments may make use of a stabilizing device to stabilize them during the procedure of inserting the inserts into the myocardium. A controller may also be provided as part of the system to coordinate the operation of the deployment instrument with the cardiac cycle. The formation of the lumens can be achieved either by the inserts or by some other means, such as a piercing tip or an energy applicator forming a portion of the instrument. The inserts may include one or more of pharmaceuticals, biologically active agents, radiopaque materials, etc.